

A taxonomic study of *Hyaloscyphaceae* in Bulgaria. II. *Dasyscyphus*, *Lachnum*, *Trichopezizella*

Evtimia Dimitrova

Abstract. Data on 17 discomycetous fungi from *Hyaloscyphaceae* (Helotiales) are presented in the article. They belong to the following genera: *Dasyscyphus* S. F. Gray (10 species), *Lachnum* Reitz (4 species) and *Trichopezizella* (Dennis) Raitv. (3 species). Five species - *Dasyscyphus pulverulentus*, *D. rhodoleucus*, *Lachnum rhytismatis*, *Trichopezizella barbata* and *T. relicina* - are reported for the first time for Bulgaria.

Key words: *Discomycetes*, *Hyaloscyphaceae*, Bulgarian fungi, taxonomy.

This article is the second contribution to the study of species composition and distribution of fungi from family *Hyaloscyphaceae* (Helotiales) in Bulgaria. It contains data on 17 species and microscopic drawings of 15 species of the genera *Dasyscyphus* (10 species), *Lachnum* (4 species) and *Trichopezizella* (3 species). Five species (marked with an asterisk in the text) are deposited in the Mycological Collection of SOM, but are not published, owing to which they are reported in this article as new for Bulgaria. Four species of genus *Dasyscyphus* (*D. callimorphus*, *D. fascicularis*, *D. oblongosporus* and *D. salicariae*) are already reported by the author and thus are given in a separate list. All specimens of the included taxa stored in the Mycological Collection of SOM have been revised. Tables for species differentiation of the investigated genera were made. The material was processed according to the comparative morphological method. The works of Baral & Krieglsteiner (1985), Dennis (1949, 1978) and Raitv. (1970) were used for species differentiation of the different taxa.

***Dasyscyphus* S. F. Gray**, Nat. Arrang. Brit. Pl. 1, p. 670, 1821.

Apothecia on stalks or sessile, seldom sessile, covered with dense white or brown hairs. Hymenium albescent, grey, yellowish to orange. Hairs cylindrical, clavate or capitate at the tips, with two to many septa, full-grained, thin- to thick-walled, hyaline or coloured, sometimes with crystal masses at the tip. Asci cylindrical or cylindrical clavate, with a iodine-blue pore, 8-spored. Ascospores clavate to filiform. Paraphyses lanceolate or cylindrical, acuminate at the tips.

Saprotrophes on phytoremainds (dead grass stalks and twigs of trees and shrubs lying on the ground).

Genus type: *Dasyscyphus virgineus* S. F. Gray

Table for species differentiation

1. Saprotrophes on grassy plants 2

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4. Apothecia sessile, covered with light-yellow hairs. Ascospores (7.5-) 8-12.5 (-15) × 1.5-2 μm	3. <i>D. mollissimus</i>
4*. Apothecia on a thin, short stalk, covered with white hairs. Ascospores (5-) 6-7.5 × 1-1.5 μm	4. <i>D. nudipes</i>
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6*. Ascospores (5.5-) 6-7.5 × 1.5-2 μm, fusiform. Saprotophes on fallen needles of <i>Pinus montana</i>	5. <i>D. pulverulentus</i>
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7*. Apothecia on a stalk	9
8. Ascospores 8-12.5 × 2-2.5 (-3) μm, ellipsoid fusiform, with one septa when mature	2. <i>D. corticalis</i>
8*. Ascospores 4-5 (-6) × 1.5-2 μm, broadly ellipsoid, unicellular	1. <i>D. cerinus</i>
9. Apothecia covered with yellow-brown hairs. Ascospores 1.5-2 μm wide	<i>D. salicariae</i>
9*. Apothecia covered with white hairs. Ascospores 1-1.5 μm wide .	<i>D. fascicularis</i>

1. *Dasyscyphus cerinus* (P e r s . : F r.) F u c k e l, Symb. Mycol., p. 305, 1869 (Fig. 2).

Peziza cerinea P e r s . : F r., Syst. Mycol., 2, p. 92, 1822; *Helotium cerina* (P e r s . : F r.) P. K a r s t e n, Mycol. Fenn. 1, p. 156, 1871; *Lachnella cerina* (P e r s . : F r.) P. K a r s t e n, Acta Soc. Fauna Fl. Fenn., 2(6), p. 131, 1885; *Erinella cerina* (P e r s . : F r.) Q u é l, Enchirid. Fung., p. 303, 1886; *Lachnum cerinum* (P e r s . : F r.) N a n n f., Nova Acta Regiae Soc. Sci. Upsal., ser. 4, 8, p. 262, 1932; *Belonidium cerinum* (F r.) R a i t v., Scripta Mycol., 1, p. 57, 1970.

References: B a r a l & K r i e g l s t e i n e r (1985, p. 65), D e n n i s (1949, p. 44; 1978, p. 170), R a i t v i i r (1970, p. 57), F a r r & al. (1989, p. 604).

Apothecia superficial, in groups, subsessile, with a short, almost black stalk, calyciform, dark-brown, covered with yellow-brown hairs; disc 0.6-1 mm in diameter, concave, with an yellowish hymenium; hairs cylindric, acuminate, septate, 92.5-210 × 3.5-5 μm, covered with large, sparce hyaline grains. Asci 37.5-55 × 2.5-4 μm, cylindric clavate, with rounded tips and a small, iodine-blue pore, 8-spored. Ascospores 4-5(-6) × 1.5-2 μm, broadly ellipsoid, unicellular, uniseriate in the ascus, hyaline. Paraphyses narrow lanceolate, up to 50 × 2-2.5 μm, guttulate.

Substrate: rotten deciduous wood.

Distribution in Bulgaria: on rotten branches of *Fagus sylvatica* L., Vitosha region (Mt Vitosha), B.A., SOM 8385-M; on rotten branches of *Salix caprea* L., Rila Mts, C.H., SOM 4325-M; on rotten branches of *Corylus avellana* L., Vitosha region

(Mt Vitoshka), B.A., SOM 6946-M; on deciduous wood, Sredna Gora (Mt Lozenska), B.A., SOM 5289-M.

The species was reported in Bulgaria only with chorological data (Hinkova, 1958; Alexandrov 1968; Hinkova & Fakirova 1970).

2. *Dasyscyphus corticalis* (Pers. : Fr.) M a s s e e, Brit. Fungus- Flora, 4, p. 360, 1895 (Fig. 4).

Peziza corticalis Pers. : Fr., Syst. Mycol., 2, p. 96, 1822; *Lachnella corticalis* (Pers. : Fr.) Fr., Summa Veg. Scand., p. 365, 1849; *Helotium corticale* (Pers. : Fr.) P. Karsten, Mycol. Fenn. 1, p. 159, 1871; *Lachnum corticale* (Pers. : Fr.) Nannf., Nova Acta Regiae Soc. Sci. Upsal., ser. 4, 8, p. 265, 1932; *Belonidium corticale* (Fr.) Raitv., Scripta Mycol., p. 56, 1970.

References: Baral & Krieglsteiner (1985, p. 65), Dennis (1949, p. 39), Farr & al. (1989, p. 665), Raitv. (1970, p. 56).

Apothecia superficial, sessile or subsessile, single or in groups, semiglobular; disc 0.2-0.8 mm in diameter, pale-yellow, covered with pale-beige to brown hairs; hairs cylindrical, septate, tapering towards the tip, apically hyaline, covered with fine baculate grains, 120-185 × 3.5-4 µm. Asci 62.5-95 × 5-8 µm, cylindrical clavate, with rounded tips and a small iodine-blue pore, 8-spored. Ascospores 8-12.5 × 2-2.5(-3) µm, ellipsoid fusiform, unicellular, with 1 septum when mature, obliquely uniseriate in the ascus, hyaline. Paraphyses cylindrical, acuminate at the tips, 1.5-2 µm wide, slightly longer than the asci.

Substrate: rotten deciduous wood.

Distribution in Bulgaria: on rotten deciduous wood, Vitoshka region (Mt Vitoshka), B.A., SOM 7110-M; on the bark of deciduous tree root, Vitoshka region (Mt Vitoshka), B.A., SOM 6403-M; on the bark of *Platanus orientalis* L., Mt Belasitsa, E.D., SOM 21484-M.

The species was reported only with chorological data in Bulgaria (Alexandrov 1968).

3. *Dasyscyphus mollissimus* (L a s c h) D e n n i s, Brit. Ascom., Ed. 1, p. 95, 1960 (Fig. 3).

Peziza mollissima L a s c h, Flora 41, p. 651, 1858; *Belonidium mollissimum* (L a s c h) R a i t v ., Scripta Mycol., 1, p. 45, 1970; *Dasyscypha leucophaea* (Pers. ex Weinm.) M a s s e e, Brit. Fungus- Flora, 4, p. 351, 1895.

References: Baral & Krieglsteiner (1985, p. 67), Dennis (1978, p. 169), Raitv. (1970, p. 45).

Apothecia superficial, sessile, single or in groups, calyciform, fully covered with long pale-yellow hairs; disc 0.7-1.5 mm in diameter, concave, with a white hymenium; hairs cylindrical, thin-walled, septate, mainly acuminate, 120-230 × 3-3.5 µm. Asci 45-62.5 × 3-3.5 µm, cylindrical clavate, with a rounded tip and a small, iodine-blue pore, 8-spored. Ascospores (7.5-)8-12.5(-15) × 1.5-2 µm, fusiform, unicellular, straight or slightly arching, biserial in the ascus, hyaline. Paraphyses lanceolate, 3-4 µm wide.

Substrate: grassy stems.

Distribution in Bulgaria: on rotten stems of *Angelica pancici* V a n d a s, Vitoshka region (Mt Vitoshka), B.A., SOM 8330-M; on rotten stems of *Cirsium* sp., Central

Balkan Range, C.H., SOM 5279-M; on a dry stem of *Doronicum* sp., Vitosha region (Mt Vitosha), E.D., SOM 21159-M; on dry stems of *Sambucus ebulus* L., Pirin Mts, C.H., SOM 16205-M; on dry stems of *Urtica dioica* L., Pirin Mts, C.H., SOM 16204-M; Western Balkan Range, C.H., SOM 5286-M; Mt Belasitsa, C.H., SOM 16208-M; on grassy stems, Sredna Gora (Mt Lozenska), B.A., SOM 6960-M.

The species was reported only with chorological data as *Lachnum mollissimum* (L a s c h.) P. K a r s t e n (H i n k o v a 1961).

4. *Dasyscyphus nudipes* (F u c k e l) S a c c. var. *minor* D e n n i s, Mycol. Pap. 32, p. 90, 1949 (Fig. 6).

References: D e n n i s (1949, p. 15; 1978, p. 167), R a i t v i i r (1970, p. 100).

Apothecia superficial, single, scattered, on a thin, short stalk (0.1-0.5 mm), covered with white hairs, discoid; disk 0.5-2 mm in diameter, initially concave, then slightly convex, with pale-beige to pale-yellow hymenium. Hairs cylindrical, 85-117.5 × 4-5 µm, thin-walled, septate, fine-grained, rounded at the tips. Asci 30-47.5 × 3-4.5 µm, cylindrical clavate, rounded at the tip, with a small iodine-blue pore, 8-spored. Ascospores (5-) 6-7.5 × 1-1.5 µm, narrow fusiform, unicellular, with a central guttule, obliquely uniseriate in the ascus, hyaline. Paraphyses lanceolate, 3.5-6.5 wide, longer than the ascus.

Substrate: dry stems of *Filipendula ulmaria* (L.) M a x i m. and branches of *Rubus* L.

Distribution in Bulgaria: on dry stems of *Filipendula ulmaria* (L.) M a x i m., Vitosha region (Mt Vitosha), B.A., SOM 7068-M and Rila Mts, E.D., SOM 21501-M; on a dry twig of *Rubus* sp., Vitosha region (Mt Vitosha), E.D., SOM 21340-M.

The species was reported only with chorological data in Bulgaria (A l e x a n d r o v 1971).

5. **Dasyscyphus pulverulentus* (L i b.) S a c c., Syll. Fungorum, 8 p. 463, 1889 (Fig. 7).

Peziza pulverulenta L i b., Pl. Crypt. Arn., p. 125, 1832; *Trichopeziza pulverulenta* F u c k e l, Symb. Mycol., 1, p. 297, 1869; *Lachnum pulverulentum* (L i b.) P. K a r s t e n, Mycol. Fenn., 1, p. 175, 1871; *Peziza solfatera* C o o k e & E l l i s, Grevillea, 7, p. 7, 1878; *Lachnella solfatera* W. P h i l l i p s, Brit. Discom., p. 246, 1887; *Dasyscypha solfatera* S a c c., Syll. Fungorum, 8, p. 463, 1889.

References: D e n n i s (1949, p. 42; 1978, p. 170), R a i t v i i r (1970, p. 94), S e a v e r (1951, p. 265).

Apothecia superficial, scyphiform, subsessile, in groups, covered with pale-yellow hairs; disc 0.5-0.6 mm in diameter, concave, with a white to yellow hymenium; hairs hard-walled, cylindrical, 55-75 × 2.5-3 µm, full of pale-yellow guttules, with irregular masses of resin on the tips. Asci 35-55 × 3-5 µm, cylindrical clavate, with a rounded tip and a slightly iodine-blue pore, 8-spored. Ascospores (5.5-)6-7.5 × 1.5-2 µm, fusiform, unicellular, biseriate in the ascus, hyaline. Paraphyses narrow lanceolate, up to 3 µm wide, longer than the asci.

Substrate: fallen needles of species of genus *Pinus* L.

Distribution in Bulgaria: on needles and cones of *Pinus montana* M i l l., Vitosha region (Mt Vitosha), B.A., SOM 8215-M.

6. **Dasyscyphus rhodoleucus* (S a c c.) S a c c., Syll. Fungorum, 8 p. 446, 1889 (Fig. 8).

Hyalopeziza rhodoleuca S a c c., *Michelia*, 2, p. 79, 1880; *Lachnum rhodoleucum* (S a c c.) R e h m., *Rabenh. Krypt. Fl.*, 1(3), p. 885, 1896.

References: B a r a l & K r i e g l s t e i n e r (1985, p. 93), D e n n i s (1949, p. 21), R a i t v i i r (1970, p. 101).

Apothecia superficial, calyciform, on a short stalk; disc 0.4-0.5 mm in diameter, concave, white, covered with cylindric, fine-grained light hairs with a rounded tip. Asci 40-52.5 × 3-4.5 μm, cylindric clavate, with rounded tips and a small iodine-blue pore, 8-spored. Ascospores (7.5-)8-12(-15) × 1.5-2 μm, fusiform, unicellular, obliquely uniseriate in the ascus, hyaline. Paraphyses lanceolate, up to 5 μm wide, longer than the asci.

Substrate: grassy stems.

Distribution in Bulgaria: on a stem of *Carex* sp., Vitosha region (Mt Vitosha), B.A., SOM 8415-M.

List of the reported species of genus *Dasyscyphus*

Dasyscyphus callimorphus (P. K a r s t e n) S a c c. (Fig. 1) - D i m i t r o v a, 1997.

D. fascicularis (V e l.) L e G a l (Fig. 5) - D i m i t r o v a, 1994 a.

D. oblongosporus H a h n & A y e r s - D i m i t r o v a, 1994 b (sub *Lachnella oblongospora* (H a h n & A y e r s) S e a v e r).

D. salicariae R e h m (Fig. 9) - D i m i t r o v a, 1994 b.

Lachnum R e t z. emend. B a r a l, *Beih. Z. Mykol.*, p. 73, 1985.

Apothecia small, sessile or on a stalk, initially closed, globular, subsequently widely infundibular-like or obovoid, widely fanning at last, calyciform, with a smooth edge, covered with snow-white hairs; hairs cylindric, thin-walled (0.2-0.4 μm thick), straight or arched, unbranched, septate, smooth or grainy, some with crystal masses at the tip. Asci cylindric or cylindric clavate, with a iodine-blue pore, 8-spored. Ascospores ellipsoid, elongate or fusiform, unicellular, seldom with one transverse septum when mature. Paraphyses lanceolate, longer than the asci.

Saprotrophes on phytoremainds (dead stems of grassy plants and branches of trees and shrubs fallen on the ground).

Genus type: *Peziza virginea* B a t s c h : F r.

Table for differentiation of species

- | | |
|---|---------------------------|
| 1. Paraphyses 2.5-3.5 μm wide..... | 2 |
| 1*. Paraphyses wider than 3.5 μm | 3 |
| 2. Apothecia on stalks. Ascospores 6-8 × 1.5-2 μm. Saprotrophes on rotten wood | 1. <i>L. brevipilosum</i> |
| 2*. Apothecia sessile. Ascospores 4-5 × 1-1.5 μm. Saprotrophes on dead deciduous leaves | 3. <i>L. rhytismatis</i> |
| 3. Apothecia with pale-brown hymenium; paraphyses up to 4.5 μm wide | 2. <i>L. pudibundus</i> |
| 3*. Apothecia with a white or pale-yellow hymenium; paraphyses up to 6 μm wide | 4. <i>L. virgineum</i> |

1. *Lachnum brevopilosum* Baral & Krieglst., Beih. Z. Mykol., 6p. 74, 1985 (Fig. 10).

Dasyscyphus brevopilus Le Gal, Rev. Mycol., 4, p. 26, 1939.

References: Dennis (1949, p. 11; 1978, p. 167), Raitviir (1970, p. 99).

Apothecia superficial, scattered, on a 1-2 mm long stalk, calyciform, covered with short white hairs; disc 0.6-2 mm in diameter, concave, white, yellowish when dried; hairs cylindric, septate, fine-grained, 2.5-4.5 μm wide, rounded or acuminate at the tips. Asci 37.5-60 \times 3-4(-5) μm , cylindric clavate, with rounded apex and a iodine-blue pore, 8-spored. Ascospores (4-)6-8 \times 1.5-2 μm , fusiform, unicellular, irregular biseriate in the ascus, hyaline. Paraphyses narrow lanceolate, 50-75 \times 2.5-3 μm .

Substrate: decorticated rotten wood.

Distribution in Bulgaria: on decorticated rotten wood of *Betula pendula* Roth, Vitosha region (Mt Vitosha), B.A., SOM 8398-M, 8399-M; on decorticated rotten wood of *Fagus sylvatica* L., Vitosha region (Mt Plana), B.A., SOM 6040-M; on decorticated rotten branch of *Picea excelsa* L., Vitosha region (Mt Vitosha), B.A., SOM 5463-M; on decorticated rotten branches of *Juglans regia* L., Pirin Mts, C.H., SOM 14398-M; on decorticated deciduous wood, Vitosha region (Mt Vitosha), C.H., SOM 5158-M, 20805-M and Western Frontier Mts, E.D., SOM 22136-M. (All samples were deposited sub *Dasyscyphus brevopilus* Le Gal).

The species was reported only with chorological data as *Dasyscyphus brevopilus* Le Gal (Alexandrov 1968, 1969).

2. *Lachnum pudibundum* (Quél.) Schroet., Schles. Krypt.-Fl., 3(2), p. 91, 1893 (Fig. 11).

Erinella pudibunda Quél., Champ. Jura et Vosges, 14 th Supplement, p. 9, 1885; *Dasyscypha pudibunda* (Quél.) Sacc., Syll. Fungorum, 8, p. 433, 1889.

References: Baral & Krieglst. (1985, p. 78); Dennis (1949, p. 14); Raitviir (1970, p. 99).

Apothecia superficial, scattered or in groups, calyciform, on a 0.8 \times 0.3 mm stalk, covered with white, subsequently pale-brown hairs: disc 0.8-1.5 mm in diameter, with pale-brown hymenium: hairs cylindric, slightly clavate to obtusely lanceolate at the tip, thin-walled, fine-grained, 50-70 \times 2.5-3.5 μm . Asci 37.5-50 \times 3-5 μm , cylindric clavate, with a small iodine-blue pore, 8-spored. Ascospores 7-7.5 \times (1.5-)2 μm , fusiform, unicellular, hyaline. Paraphyses lanceolate, 75-100 \times 4.5 μm .

Substrate: dead wood.

Distribution in Bulgaria: on rotten branches of *Corylus avellana* L., Mt Sredna Gora (Mt Lozenska), C.H., B.A., SOM 7066-M; on rotten wood of *Fagus sylvatica* L., B.A., SOM 8488-M; on rotten deciduous wood, Mt Sredna Gora (Mt Lozenska), C.H., SOM 13580-M. (All samples were deposited sub *Dasyscyphus pudibundus* (Quél.) Sacc.).

The species was reported only with chorological data as *Dasyscyphus pudibundus* (Quél.) Sacc. (Hinkova & Alexandrov 1971; Kuthan & Kotlaba 1981).

3. **Lachnum rhytismatis* (W. P h i l l i p s) N a n n f., Trans. Brit. Mycol. Soc., 23, p. 242, 1939 (Fig. 12).

Peziza (*Dasyscypha*) *rhytismae* W. P h i l l i p s, Grevillea, 8, p. 101, 1880; *Lachnella rhytismatis* W. P h i l l i p s, Brit. Discom., p. 250, 1887; *Dasyscypha rhytismatis* (W. P h i l l i p s) S a c c., Syll. Fungorum, 8, p. 543, 1889; *Lachnum echinulatum* (R e h m) R e h m, Rabenh. Krypt.-Fl. 1(3), p. 876, 1893.

References: D e n n i s (1949, p. 27), B a r a l & K r i e g l s t e i n e r (1985, p. 49).

Apothecia superficial, scattered, subsessile, calyciform, covered with white hairs; disc 0.1-0.2 mm in diameter, concave; hairs, cylindrical, grained, with 1-2 septa slightly widening at the tip, with masses of fine crystals. Asci 25-30 × 4 μm, cylindrical clavate, 8-spored. Ascospores 4-5 × 1-1.5 μm, unicellular, baculate or with one acuminate tip, biseriate in the ascus, hyaline. Paraphyses lanceolate, 52.5-65 × 2.5-3.5 μm, longer than the asci.

Substrate: dead leaves chiefly of *Acer* L. and *Quercus* L.

Distribution in Bulgaria: on the dorsal side of dead leaves of *Quercus* sp., Central Balkan Range, C.H., B.A., SOM 5307-M. (sub *Dasyscyphus rhytismatis* (W. P h i l l i p s) S a c c.).

4. *Lachnum virgineum* (B a t s c h : F r.) P. K a r s t e n, Mycol. Fenn., 1, p. 169, 1871 (Fig. 13).

Peziza virginea B a t s c h : F r., Syst. Mycol., 2, p. 90, 1822; *Lachnella virginea* (B a t s c h : F r.) P. K a r s t e n, Not. Sällsk. Fauna Fl. Fenn. Förh., 11, p. 249, 1870; *Erinella virginea* (B a t s c h : F r.) Q u é l., Enchirid. Fung., p. 304, 1886; *Dasyscypha virginea* (B a t s c h : F r.) F u c k e l, Symb. Mycol., p. 305, 1869-70.

References: B a r a l & K r i e g l s t e i n e r (1985, p. 83), D e n n i s (1949, p. 12; 1978, p. 166), F a r r & al. (1989, p. 755), R a i t v i i r (1970, p. 99), S e a v e r (1951, p. 253).

Apothecia superficial, single or in groups, calyciform, on a long stalk (up to 1.5 mm), covered with white hairs; disc 0.2-2 mm in diameter, slightly concave to almost flat, with white to pale-yellow hymenium; hairs cylindrical, thin-walled, rounded, occasionally slightly widening at the tip, with 1-3 septa, 77.5-120 × 3-4.5 μm, fine-grained. Asci 40-57.5 × 3-5 μm, cylindrical clavate, with a rounded or slightly narrowing tip and a small, iodine-blue pore, 8-spored. Ascospores 5-9(-10) × 1-2(-2.5) μm, fusiform, unicellular, obliquely uniseriate or biseriate in the ascus, hyaline. Paraphyses lanceolate, longer than the asci, 50-77.5(-100) × 3.5-6(-7.5) μm.

Substrate: dead wood and rotten phytoremainds.

Distribution in Bulgaria: on cone scales of *Alnus glutinosa* G a e r t n., Vitosha region (Mt Vitosha), B.A., SOM 5247-M; on cone scales of *Alnus viridis* (C h a i x) D C., Vitosha region (Mr Vitosha), B.A., SOM 8357-M, 8442-M; on cone scales of *Alnus* sp. Pirin Mts, C.H., SOM 16211-M; on a rotten branch of *Betula pendula* R o t h, Vitosha region (Mr Vitosha), B.A., SOM 6939-M, 8396-M; on cupules of *Castanea sativa* M i l l., Mt Belasitsa, E.D., SOM 21479-M, 21480-M; on a rotten branch of *Carpinus orientalis* M i l l., Mt Belasitsa, E.D., SOM 21482-M; on rotten branches of *Corylus avellana* L., Sredna Gora (Mt Lozenska), B.A., SOM 6643-M; on rotten branches of *Erica arborea* L., Mt Strandzha, C.H., SOM 7070-M; on

cupules of *Fagus* sp., Sredna Gora, E.D., SOM 20827-M and Vitosha region (Mt Vitosha), C.H., SOM 14400-M, E.D., SOM 20809-M; on cupules of *Fagus sylvatica* L., Vitosha region (Mt Vitosha), B.A., SOM 7086-M; on rotten leaves of *Fagus sylvatica* L., Vitosha region (Mt Plana), B.A., SOM 6575-M, Mt Vitosha, B.A., SOM 7155-M; on gemmas of *Fagus sylvatica* L., Vitosha region (Mt Vitosha), B.A., SOM 8369-M; on rotten branches of *Fagus sylvatica* L., Vitosha region (Mt Vitosha), B.A., SOM 7154-M, 7903-M, 8360-M; on rotten leaf stalks of *Dryopteris* sp., Vitosha region (Mt Vitosha), B.A., SOM 8395-M; on rotten cones of *Picea abies* (L.) K a r s t., Vitosha region (Mt Vitosha), E.D., SOM 21647-M, B.A., SOM 8496-M, 8494-M, 8491-M; on rotten cone scales of *Pinus sylvestris* L., Vitosha region (Mt Plana), B.A./., SOM 6577-M and Central Balkan Range, E.D., SOM 21626-M; on rotten conifer wood, Vitosha region (Mt Vitosha), B.A., SOM 8493-M, 8495-M; on rotten leaves and branches of *Quercus polycarpa* S h u r., Vitosha region (Mt Vitosha), B.A., SOM 6385-M; on rotten wood of *Quercus* sp., Sredna Gora (Mt Lozenska), B.A., SOM 7050-M; on rotten branches of *Rosa* sp., Sredna Gora (Mt Lozenska), C.H., SOM 7061-M, 7064-M; on dry branches of *Rubus* sp., Rila Mts, E.D., SOM 21332-M and Central Balkan Range, E.D., SOM 21318-M, 21334-M; on rotten wood of *Salix* sp., Vitosha region (Mt Vitosha), B.A., SOM 6754-M, E.D., SOM 20830-M; on rotten deciduous leaves, Mt Belasitsa, E.D., SOM 21481-M; on decorticated rotten deciduous branches, Rila Mts, E.D., SOM 21194-M; on dry grassy stems, Vitosha region (Mt Vitosha), B.A., SOM 6400-M. (All samples were deposited sub *Dasyscyphus virgineus* (B a t s c h) S. F. G r a y).

The species was reported in Bulgaria as *Lachnum virgineum* B a t s c h (H i n k o v a 1955) and as *Dasyscyphus virgineus* (B a t s c h) S. F. G r a y (A l e x s a n d r o v 1968, 1969).

Trichopezizella (D e n n i s) R a i t v., Aesti NSVTA Toim. Biol., 18, p. 68, 1969.

Apothecia sessile or subsessile, calyciform to infundibular, with pale hymenium, covered outside with long, coarse, brown hairs, with smooth thick walls and many septa, and with lighter and thin-walled upper cells. Asci cylindrical or cylindrical clavate, with a iodine-blue pore, 8-spored. Ascospores fusiform, ellipsoid or cylindrical, unicellular or with one septum. Paraphyses lanceolate or cylindrical, with acuminate tips.

Saprotrophes on phytoremaines (dead grassy stems and branches of trees and shrubs lying on the ground).

Genus type: *Peziza nidulus* F r.

Table for species differentiation

- | | |
|---|------------------------|
| 1. Saprotrophes on grassy plants | 2 |
| 1*. Saprotrophes on dead branches on species of genus <i>Lonicera</i> | 1. <i>Tr. barbata</i> |
| 2. Apothecia sessile. Ascospores 1.5-2 µm wide, narrow fusiform | 2. <i>Tr. nidulus</i> |
| 2*. Apothecia on a short stalk. Ascospores 2-2.5 µm wide, clavate | 3. <i>Tr. relicina</i> |

1. *Trichopezizella barbata (K u n z e : F r.) R a i t v., Scripta Mycol., 1, p. 60, 1970 (Fig. 14).

Peziza barbata K u n z e apud F r., Syst. Mycol., 2, p. 99, 1822; *Lachnella*

barbata (Kunze) Fr., Summa Veg. Scand., p. 365, 1849; *Lachnea barbata* (Kunze) Gill., Champ. de France, Discomycetes, p. 82, 1879-83; *Dasyscypha barbata* (Kunze) Masee, Brit. Fungus-Flora, 4, p. 361, 1895; *Lachnum barbatum* (Kunze) Schröt., Schles. Krypt.-Fl., 3(2), p. 92, 1908.

References: Baral & Krieglsteiner (1985, p. 90), Dennis (1949, p. 53; 1978, p. 171), Raitvii (1970, p. 60).

Apothecia superficial, sessile, calyciform, covered with long, russet-brown hairs; disc up to 1 mm in diameter, concave; hairs cylindrical, arched, thick-walled, septate, 3.5-4 µm wide. Asci 50-70 × 4-7 µm, cylindrical, 8-spored. Ascospores 6-8 × 2-2.5 µm, fusiform, occasionally with one septum, biserial in the ascus, hyaline. Paraphyses lanceolate, up to 4 µm wide, longer than the asci.

Substrate: dead stems of *Lonicera* L.

Distribution in Bulgaria: on rotten branches of *Lonicera xylosteum* L., Western Balkan Range, C.H., B.A., SOM 7900-M (sub *Dasyscyphus barbatus* (Kunze) Masee).

2. *Trichopezizella nidulus* (J. C. Schmidt & Kunze : Fr.) Raitv., Scripta Mycol., 1, p. 61, 1970 (Fig. 15).

Peziza nidulus J. C. Schmidt & Kunze : Fr., Syst. Mycol., 2, p. 104, 1822; *Trichopeziza nidulus* (J. C. Schmidt & Kunze) FucKel, Symb. Mycol., p. 297, 1869-70; *Lachnea nidulus* (J. C. Schmidt & Kunze) P. Karsten, Not. Sällsk. Fauna Fl. Fenn. Förh., p. 11, 1870; *Lachnum nidulus* (J. C. Schmidt & Kunze) P. Karsten, Mycol. Fenn., 1, p. 181, 1871; *Lachnella nidulus* (J. C. Schmidt & Kunze) QuéL., Enchirid. Fung., p. 313, 1886; *Dasyscypha nidulus* (J. C. Schmidt & Kunze) Masee, Brit. Fungus-Fl., 4, p. 104, 1895.

References: Baral & Krieglsteiner (1985, p. 89); Dennis (1949, p. 54; 1978, p. 172), Farr & al. (1989, p. 1000), Raitvii (1970, p. 61).

Apothecia superficial, sessile, scattered, cup-shaped, covered with brown hairs; disc 0.2-1.2 mm in diameter, concave; hairs 112-192.5 × 3-4.5 µm, cylindrical, with moderately thick walls, septate, rounded at the tip, with hyaline cells often secreting gum. Asci 40-60 × 4-5 µm, cylindrical clavate, with a small iodine-blue pore, 8-spored. Ascospores (6-)7.5-10 × (1-)1.5-2 µm, narrow fusiform, unicellular, biserial in the ascus, hyaline. Paraphyses narrow lanceolate, 2.5-5 µm wide, longer than the asci.

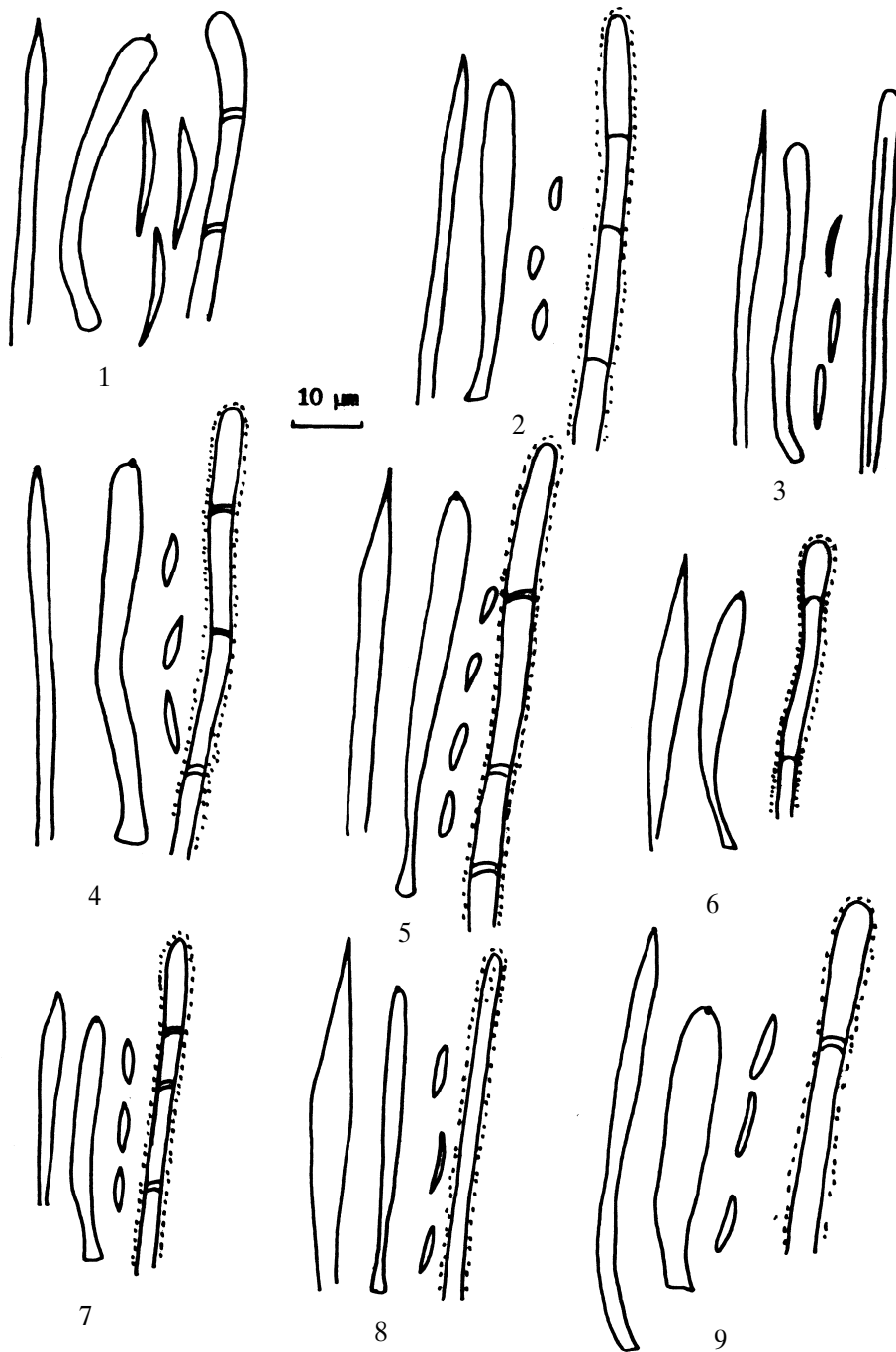
Substrate: dead grassy stems.

Distribution in Bulgaria: on a dry stem of *Geranium pyrenaicum* Burm., Mt Belasitsa, E.D., SOM 21485-M; on dry stems of *Polygonatum* sp., Rila Mts, E.D., SOM 22041-M; on a dry stem of *Cicerbita alpina* (L.) Wallr., Rila Mts, E.D., SOM 22033-M. (All samples were deposited sub *Dasyscyphus nidulus* (Schmidt & Kunze) Masee).

The species was reported in Bulgaria as *Dasyscyphus nidulus* (Schmidt & Kunze) Masee (Hinkova & Alexandrov 1971).

3. **Trichopezizella relicina* (Fr. : Fr.) Raitv., Scripta Mycol., 1, p. 62, 1970.

Peziza relicina Fr., Syst. Mycol., 2, p. 103, 1822; *Trichopeziza relicina* (Fr.)



Figs. 1-9. Asci, ascospores, paraphyses and hairs of: **1.** *Dasyscyphus callimorphus*; **2.** *D. cerinus*; **3.** *D. mollissimus*; **4.** *D. corticalis*; **5.** *D. fascicularis*; **6.** *D. nudipes*; **7.** *D. pulverulentus*; **8.** *D. rhodoleucus*; **9.** *D. salicariae*

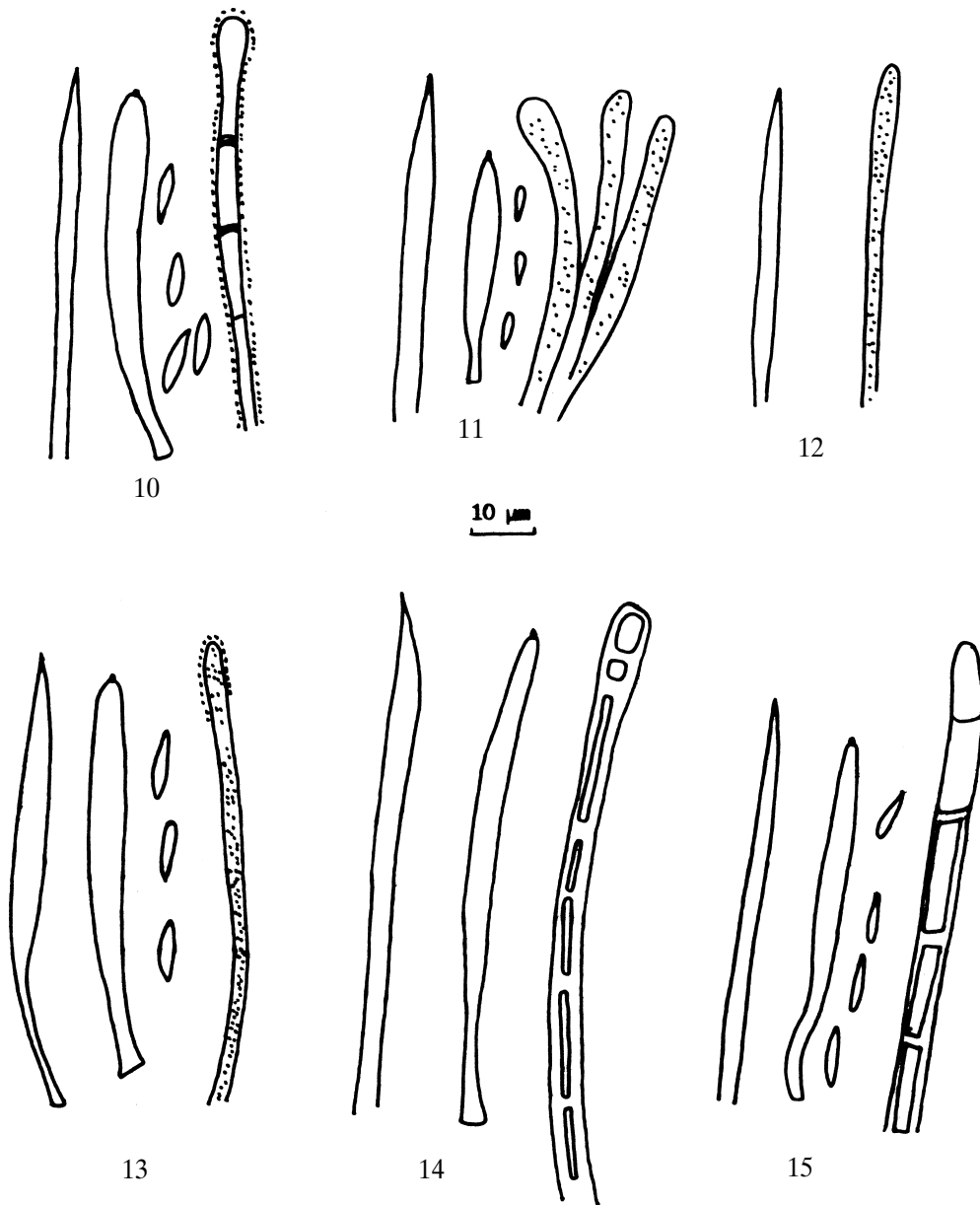


Fig. 10. Asci, ascospores, paraphyses and hairs of *Lachnum brevipilosum*. **Fig. 11.** Asci, ascospores, paraphyses and hairs of *Lachnum pudibundum*. **Fig. 12.** Paraphyses and hairs of *Lachnum rhytismatis*. **Fig. 13.** Asci, ascospores, paraphyses and hairs of *Lachnum virgineum*. **Fig. 14.** Asci, paraphyses and hairs of *Trichopezizella barbata*. **Fig. 15.** Asci, ascospores, paraphyses and hairs of *Trichopezizella nidulus*.

F u c k e l, Symb. Mycol., p. 296, 1869-70; *Lachnum relicinum* (F r.) P. K a r s t e n, Mycol. Fenn., 1, p. 182, 1871; *Lachnella relicina* (F r.) Q u é l., Enchirid. Fung., p. 313, 1886; *Dasyscypha relicina* (F r.) B o u d., Discom., d'Europe, p. 121, 1907.

References: B a r a l & K r i e g l s t e i n e r (1985, p. 90), D e n n i s (1949, p. 55), F a r r & al. (1989, p. 1000).

Apothecia superficial, almost sessile or on a very short stalk, calyciform, covered with russet-brown hairs; disc 0.2-0.4 mm in diameter, concave; hairs 290-360 × 5-7 μm, thick-walled, septate, rounded or acuminate at the tip. Asci up to 52.5 × 3-4.5 μm, apically rounded and with a small, iodine-blue pore, 8-spored. Ascospores 8-10 × 2-2.5 μm, unicellular, clavate, biseriate in the ascus. Paraphyses cylindrical, acuminate at the tip, 2.5-3 μm wide, slightly longer than the asci.

Substrate: dead grassy stems.

Distribution in Bulgaria: on dry grassy stems, Central Balkan Range, B.A., SOM 5354-M (sub *Dasyscyphus relicinus* (F r.) B o u d.).

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Address:
Institute of Botany,
Bulgarian Academy of Sciences,
Acad. G. Bonchev Str, block 23
1113 Sofia, Bulgaria

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R e f e r e n c e s

- A l e x a n d r o v, B. 1968. Studies on the discomycetous flora of Vitosha Mountain. I. — Izv. Bot. Inst. (Sofia), **18**: 157-166 (in Bulgarian).
- A l e x a n d r o v, B. 1969. Material on the discomycetous flora of Plana Mountain. I. — Izv. Bot. Inst. (Sofia), **19**: 211-216 (in Bulgarian).
- A l e x a n d r o v, B. 1971. Investigation of the discomycetous flora of Vitosha Mountain. II. — Izv. Bot. Inst. (Sofia), **21**: 231-235 (in Bulgarian).
- B a r a l, H. O. & K r i e g l s t e i n e r, G. J. 1985. Inoperculate *Discomyzeten*. — Beih. Z. Mykol., **6**: 1-226.
- D e n n i s, R. W. G. 1949. A revision of the British *Hyaloscyphaceae*, with notes on related European species. — Mycol. Pap., **32**: 1-97.
- D e n n i s, R. W. G. 1978. British Ascomycetes. 2nd edition. Vaduz. Cramer, 585 pp.
- D i m i t r o v a, E. 1994 a. A contribution to the study of the discomycetous fungi in Bulgaria. I. — Fitologija, **47**: 69-73.
- D i m i t r o v a, E. 1994 b. A contribution to the study of the discomycetous fungi in Bulgaria. II. — Fitologija, **47**: 74-77.
- D i m i t r o v a, E. 1997. Revision notes on discomycetous fungi of Helotiales from Bulgaria. — Phytol. Balcan., 3/2-3:
- F a r r, D. F., B i l l s, G. F., C h a m u r i s, G. P & R o s s m a n, A. J. 1989. Fungi on Plant Products in the United States. APS Press, 1252 pp.
- H i n k o v a, T s. 1955. Beitrag zur Flora der Pilze auf dem Vitoscha-Gebirge. — Izv. Bot. Inst. (Sofia), **4**: 323-350 (in Bulgarian).
- H i n k o v a, T s. 1958. Floristisches Material über die Pilzflora in Östlichen Teil des Rila-Gebirges. — Izv. Bot. Inst. (Sofia), **6**: 411-428 in Bulgarian).
- H i n k o v a, T s. 1961. Materials on the fungus flora of Bulgaria. — Izv. Bot. Inst. (Sofia), **8**: 251-259 (in Bulgarian).
- H i n k o v a, T s. & F a k i r o v a, V. 1970. Materials on the fungus flora of Lozenska Mountain. — Izv. Bot. Inst. (Sofia), **20**: 165-183 (in Bulgarian).
- H i n k o v a, T s. & A l e x a n d r o v, B. 1971. On the fungus flora of Lozenska Mountain. II. — Izv. Bot. Inst. (Sofia), **21**: 225-229 (in Bulgarian).

- K u t h a n, J. & K o t l a b a, F r. 1981. Makromyzeten des Nationalparkes Ropotamo in Bulgarien.
— Sborn. Nar. Muz. v Praze, Rada B, Prir. Vedy, **37**: 77-136.
- R a i t v i i r, A. 1970. Synopsis of the *Hyaloscyphaceae*. — Scripta Mycol., **1**, 115 pp.
- S e a v e r, F.J. 1928-1951. The North American Cup-Fungi. Vol. 2 (Inoperculates). New York. 428 p.